

Commencement Address of

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FOR INTELLECTUAL PROPERTY
&
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U.S. PATENT AND TRADEMARK OFFICE**

at

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INTRODUCTION

Dean Hesse, members of the Board of Trustees, distinguished faculty, graduates, family, and friends, it's an honor and a privilege to be here today to help you mark this joyful occasion. I'm very grateful that you have asked me to share the celebration of the first graduating class of what promises to be an amazing century... one unrivaled in technological innovation and global integration.

I'm also pleased to be in the home state of one of the U.S. Patent and Trademark Office's most important friends in Congress – the Chair of our Senate Appropriations Subcommittee, your junior Senator and former Governor, Judd Gregg.

I give about five speeches a week on average, but this is actually my first commencement address, so I thought long and hard about what I should say today -- trying to pinpoint any words of wisdom that I could impart to you before you leave these wonderful surroundings.

One of the things I came across was the fact that Franklin Pierce, when he was President, memorized his entire 1853 inaugural address and then recited it from memory.

Now, I have to be careful because I'm a presidential appointee, but I have to assume that President Pierce's speeches were a bit shorter than recent incumbents. So, in the spirit of this institution's namesake, I will do my best to keep my remarks brief. Hopefully, that alone is reason to celebrate.

OVERVIEW

Let me start by quoting one of 20th century America's greatest philosophers, a very familiar Italian-American named Yogi Berra, who once said, "It ain't over, till it's over."

Well, as far as law school goes, it is just about over. But in so many ways, it is obviously and clearly just beginning. And it is the world out there -- and your responsibility to it as lawyers -- that I want to touch on today.

In some ways, what comes next may seem a little incredible. After years of study, you are one walk across this stage -- and one or possibly two more exams -- away from being authorized, by the state, no less, to exercise one of the most important and responsible functions in our society.

Now, I will admit there have been times in my own career when I have hesitated, pen poised over some document or other, and thought to myself, "The Commonwealth of Pennsylvania has authorized me to do this? Do they know what they are allowing me to do? Are they absolutely sure???"

But indeed they are. They understand very well the critical role that we lawyers play in one of the most important functions in our Democracy. Because, with the possible exception of mercantile capitalism, no principle is more important to maintaining the

workings of our Democratic society than adherence to -- and a firm belief in -- the primacy of the Rule of Law.

It is that Rule of Law, for example that will be on vivid display next January 20th in Washington, when we will again, as we have for 200-plus years, observe the peaceful transition of power from one administration to the next, irrespective of political party or persuasion.

Lawyers' role in that Rule have shown particularly brightly throughout our history, as many in our profession have served as catalysts and activists for important causes. We lawyers have fought at the forefront of most, if not all, of the significant fights for social justice in this country. Take for example, Thurgood Marshall, Charles Houston, Constance Baker Motley -- lawyers for the NAACP who began to tear down the walls of Jim Crow laws back in the 1930s. This led to the true emancipation of African-Americans, some 100 years after it was supposed to have taken place.

And, it is interesting to note where many of us now find ourselves, those of us who are intellectual property lawyers, for we are in what was once a niche and now has become one of the most important legal precincts of our society.

And, of course, what brings us here today foretells the role that many of you will play in building upon this legacy, especially in what has been characterized as one of the Golden Ages of Innovation.

INTELLECTUAL PROPERTY

One thing I vowed never to do when I was younger was talk about how it was in the "good old days." But, of course, it turns out that one of the great things about getting older is that you get to break vows like this all the time. So, I hope you will allow me one reminiscence that applies to where we find ourselves today.

Having been a Chemistry major in college, following a lifelong interest in science, combined with a belief in the power of the law to change the world, my senior advisor in college suggested I look into patent law. What I found back then was that intellectual property law really was quite a backwater. People questioned whether patent lawyers were even really lawyers. The law school I attended had one patent course, a two credit seminar, no less, taught by adjunct faculty. This was not at all unusual. The "prestige" law schools of the day rarely offered courses in the topic at all. Some still don't, to their foolish detriment.

Needless to say, the landscape of intellectual property law and, indeed, the contours of the global economy, have changed considerably since then.

One of the most eminent physicists of the 20th century, Stephen Hawking recently noted that "The world has changed far more in the past 100 years than in any other century in history. The reason is not political or economic -- but technological."

Reflecting upon the transitions we have seen in the Patent Office certainly reinforces that reality.

At the start of the last century, fully one-third of all patent applications filed in our Patent Office concerned one particular transportation technology, very important at the time: bicycle technology.

We had stopped requiring the submission of working models, except for two categories of invention which were thought to be so outlandish and impossible that we made you literally demonstrate to us that they worked. One of these we still require today: perpetual motion machines.

The other, almost equally unbelievable at the time, was heavier than air, machine-powered aircraft. Then, in 1903, two bicycle mechanics from Dayton, Ohio named Wright submitted such an application, and the science of aeronautics was born. Needless to say, we subsequently dropped that particular requirement.

In 1900, a date so relatively recent that there are still people around who were alive then, there was no television. There was no radio. There were no transistors or integrated circuits, and certainly no digital computers.

There was no penicillin or other antibiotics. No vaccines to prevent any disease but small pox. No understanding of the chemistry, let alone that biology, of DNA. And no genetically-altered living organisms, other than a few hybridized grain crops.

There were no airplanes nor spacecraft. No controlled use of atomic energy. No x-rays or MRI machines. No faxes. No electric home appliances of any sort.

No synthetic fibers. No lasers or CD players. Very few man-made fertilizers. No widespread use of controlled irrigation. And few inhabited buildings over approximately 15 stories.

Automobiles, motion pictures, plastics, and systems for the widespread distribution of electricity, were all in their infancy.

From the first great invention of the 20th century, the airplane, to what will likely be the last -- the complete expression of the human genome -- it has been an amazing time.

Today, in our Office, we routinely examine patent applications in areas such as gene fragments, bio-informatics, combinatorial chemistry and methods for using the Internet which were unthinkable even ten years ago. People do keep reinventing the wheel, however. We issue about five new wheel patents every week.

What is almost as amazing as these advances is the realization that, with a little help from biomedical technology -- and a little luck -- many of you may actually see the end of the

next century. And you will see where the technological miracles unimagined today will take us.

Emerging areas such as nanotechnology, for example, hold the promise of molecular computers, the size of a sugar cube, that can store the entire contents of the Library of Congress. Microscopic computer chips will be able to circulate throughout our bodies, serving a host of diagnostic and other important purposes.

Transportation may be revolutionized again, perhaps to other planets or in other modes. Then again, given revolutions in communication, it may not even matter.

All manner of disease and debilitating physical and mental condition may likely be cured.

All of these developments -- past, present, and future -- in many ways do, and will, owe much of their success, and perhaps their very existence, to something that happened exactly 210 years ago this year.

In 1790, meeting in my home town of Philadelphia, the first Congress of the newly-formed nation called the United States of America met for the first time, under the direction of a governing document called the Constitution, which had been recently ratified.

That Constitution, adapting a system from the British model, which itself was actually adapted from a system first developed by the Venetians about 200 years earlier, included a provision which was intended, in the words of its authors, “to promote the progress of science and the useful arts” by guaranteeing to inventors and authors, the right, for a period of time, to control their inventions or writings -- what we call patents and copyrights, respectively.

It fell to that first Congress to implement the Constitutional provision. Fortunately, they did not disappoint. And so, among the very first acts of the very first Congress was the passage of the Patent Act.

The first United States patent application was filed shortly after that, again by a Philadelphian, Samuel Hopkins. It concerned a method for producing a chemical called potash, which is used in fertilizers and gunpowder. This was very important technology for a new struggling agrarian country with a huge border to defend.

That first application was personally examined and issued by one of the most inquisitive minds of his day, and one of the principal authors of the Constitution, the Secretary of State at the time, Thomas Jefferson.

From the cotton gin to the telegraph, from the telephone to the television, from the automobile to antibiotics, from transistors to computer software and to genomics, that facile and flexible system has brilliantly served the purpose for which it was intended -- and for which its authors had such high hopes.

Because of our Founding Fathers' belief in the right of an inventor to his or her creation, we stand today in the midst of an Information Revolution that rivals the great renaissances of centuries past.

The system nurtures the "spark of genius" in Abraham Lincoln's phrase. It provides the bedrock upon which entire new industries are built.

And, maybe most importantly, it breathes reality into people's dreams.

Since those early days, the U. S. Patent and Trademark Office has issued more than six million patents. In fact, we issued the six millionth patent just this past December, for the software that connects Palm Pilot® handheld devices to your PC.

And if you go back through them -- they represent one of the most important repositories of technical information known to man -- you will see not only the tremendous technological progress we have made as a people, but you will also understand how important intellectual property is to protecting and nurturing that technological growth and its natural successor, economic development.

Today, information and knowledge-based industries -- biotechnology, telecommunications, microelectronics, and the like -- are the primary engines of economic expansion. No less an authority than Federal Reserve Chairman Alan Greenspan has credited technological development with providing the productivity increases that have fueled the longest sustained period of economic growth in our nation's history.

One key technology, of course, is the Internet. A plaything of a small group of digerati only a decade ago, the Internet has come to revolutionize the way all of us live, the way we work, and the way we learn.

Imagine. For centuries, knowledge of our world was limited to a lucky few, controlled in many cases by forces bent on restricting access to that information for ideological or political purposes, while the majority often stood on the shore in darkness, gazing across that information sea with wonder.

But not today. Information, that great source of power, is leveling the playing field that wealth, lineage and political control may have distorted.

Ultimately, it will fall to historians to decide whether the Internet truly rivals Gutenberg's invention of the printing press in the 15th century or even Bell's of the telephone in the 19th. But one thing is clear: the Internet is one more thing that has made intellectual property law a fascinating area to be involved with.

Not surprisingly, the explosion of the Internet has sent the world's system of commercial law reeling. It took centuries to build a system of international commercial law between merchants -- *lex mercatoria*.

Now we are faced daily with millions of e-commerce transactions, both domestic and international. Just within our own federal legal system -- where each state can have different contract and tort laws -- the challenge is enormous. And internationally, we have to rethink everything from contract law about signatures to consumer protection and tax statutes.

Building an international intellectual property system that includes but is not limited to the Internet is forcing us to work on several levels at once:

At one end, we're negotiating new international norms -- new treaties. Two years ago, we negotiated two treaties, the World Intellectual Property Organization (WIPO) Copyright Treaty and the WIPO Performances and Phonograms Treaty, which bring copyright jurisprudence into the digital age.

I also just returned last week from a WIPO Diplomatic Conference in Geneva, where I headed the U.S. Delegation in the negotiations of the Patent Law Treaty. We are hopeful that this treaty will allow inventors to file a fairly simple patent application -- in a single format -- that will be accepted by all national patent offices.

At the operational level, we are also hopeful that we can lay the foundation for the eventual filing of all patent and trademark applications over the Internet, with the efficiencies and cost savings that this provides.

Later this year, we'll take part in another Diplomatic Conference to negotiate a treaty that protects the rights of audio-visual performers. The protection of these rights is important among other reasons because, in the digital era, a performer's image can be altered in ways over which they have no control or involvement.

Domestically, we attempt to manage the results of these developments daily.

This year we will receive over 300,000 patent applications and an equal number of trademark registration applications. We are the largest recipient of mail in Washington, D.C., and the single largest recipient of Express Mail in the world.

The USPTO also has a massive and highly-trained staff. We have over 400 Ph.D. scientists and 600 lawyers among our 6,500 employees.

We will hopefully soon be housed in the fourth largest government building complex.

We are the probably the most diverse agency in the Federal government; the first to hire female clerks in the 1850s, including Clara Barton, who later founded the Red Cross. Today we are one of the largest employers of Vietnamese-Americans in America.

We receive almost \$1.2 billion dollars in revenue, and Congress even lets us keep about \$850 million of that.

EMERGING TECHNOLOGY ISSUES

We also find ourselves involved in fascinating policy issues that occasionally land us on the front pages of newspapers and magazines – uncommon territory for the patent system, but another clear indication of the importance of our issues to the public and to the economy.

Let me cite two we have been engaged in in recent days.

There has been a robust public debate, one which has even included the CEO of one of the on-line world's most prominent players, Jeff Bezos, over the patenting of methods of doing business, especially business on the internet.

Should these methods be patentable? So long as they meet the statutory requirements for patentability -- that is that they are useful, new or novel, and they are not obvious over what's come before -- the Courts, who set the standard in these matters, have told us clearly that they are.

Today we are issuing software-implemented business method patents, as we have for almost 20 years, to the tune of about 600 a year. That figure is expected to rise about 50% this year. Yes, it's a significant number, but one which also needs to be kept in some perspective: we issued over 160,000 patents all together in 1999.

Will these patents interfere with -- or even destroy -- the Internet? Of course not. The patent which sparked much of the recent debate, Mr. Bezos's patent on his so-called "one-click technology" for on-line ordering, was recently litigated and its validity upheld by both the trial and appeals courts. One defense witness even stated that they would not have thought to have constructed the system in that way; powerful evidence certainly of non-obviousness. But what did Barnesandnoble.com, the defendant, do in response? They simply designed around the patent claims, and now use two clicks in their ordering system. Technology moved forward.

Commentators have predicted for over 20 years that software patents would destroy the software industry, a prediction that seems a little strong in the face of that industry's development over that time.

Should we not be mindful of that possibility, however? We certainly should. The system should always serve to advance technological development, not retard it. And if it ceases in that function, it must be reexamined.

The second area of great interest lies within ourselves.: whether to issue patents on genomic inventions -- gene sequences and their fragments. And the broader question of

making genetic information as widely available as possible has reached the highest levels of our government.

Recently, President Clinton and British Prime Minister Tony Blair issued a joint statement praising the Human Genome Project, a jointly-funded research consortia, for their efforts to make raw human gene sequence data freely available. Also in their statement, but somewhat lost in the subsequent discussion, was their recognition that only strong intellectual property rights would provide the incentive to take that data and use it to create the life saving therapies and pharmaceuticals that will allow that staggering achievement to reach its true potential.

This confusion briefly lead to significant negative effects on capital markets, which was certainly not its intent. But in some ways that disruption actually highlighted the importance of the patent system to protect and nurture those inventions and the world's investment in them.

Let me be clear about the joint statement: it did not in any way affect the patent policy of the United States. What was patentable before the statement, was patentable afterwards.

But the fair question may also be asked: what should be patentable in this area? And, again, will the patent system actually work against itself and interfere with the development of life saving inventions? Are we limiting the ownership to a few of the common heritage of us all?

In our examination process, we again turn to the statutory requirements. Genes are chemicals -- complex chemicals to be sure, but chemicals nonetheless. And to be patentable they have to have a particular use, be new, and not obvious in view of the known state of the art.

It is in the use or utility requirement that much of the debate has focused, and we at the USPTO have recently issued Utility Guidelines for Examination which have raised the utility bar to address concerns which have been appropriately raised. A genomic invention must have specific, substantial, and credible utility to be patentable. One simply cannot patent the gene itself without also clearly disclosing the new use to which that gene will be put.

But what of patenting human genes in the first place? Aren't they simply found in nature? How can those things which we carry around with us constantly, meet the novelty requirement?

The answer lies in the nature of the identification of the gene. Chemicals and pharmaceuticals that have been isolated and purified from naturally-occurring sources have long been held patentable. When Dr. Fleming discovered that mold in his petri dish had killed bacteria nearby, and then isolated penicillin from that mold, that drug was patented, and the world was a safer place. When taxol, which had been discovered from

the yew tree of Washington State, was found to treat breast cancer, that isolated and purified compound was patentable.

But the human body is different, isn't it? Well, actually, from a patenting standpoint, no. We have also patented many chemicals identified, isolated and purified from human sources: insulin for the regulation of sugar metabolism, human growth hormone, antigens for the identification of prostate cancer, vitamins. All of these have been patented.

Genomic inventions are no different in this regard. In fact, there are so many chemicals found in the human body, that if we ruled them all off limits to patenting, we would surely rule out an extraordinary number of valuable and important inventions.

This does not mean, however, that we should be blind to the related issue of access to those inventions. Those inventors and owners of genomic patents need to be acutely aware of the heavy responsibility inherent in that ownership. Licensing and other technology transfer regimes need to strongly account for the powerful public desire to ensure that the use of these inventions for the greater good of all mankind is not unduly burdened. If they do not, there are other mechanisms which can be considered to ensure that this access is available.

THE GRADUATES' ROLE

But enough about us. This day is about you. And as global and large as this all seems, this also brings me to one key aspect of your role in all of this. For as important as adherence to the Rule of Law is, and as far as new technologies will take our various systems, I wanted to take a moment to remind you that it is equally important to always remember in whose service you will find yourselves as lawyers.

They are called clients.

To illustrate, I've brought a prop with me today. It might be a little hard to see, but what it is, is a little brass valve seat, used in a pressure release valve employed in a type of boiler. It has a specifically designed Teflon[®] insert on the top. It was made -- invented actually -- by an engineer named Davis working for the Superior Valve Company of Connellsville, Pennsylvania.

And why I brought it today, and why it sits right in front of me on my desk at the Patent and Trademark Office -- as it has at every place that I've worked -- is because it is the invention on which I wrote my very first patent application, almost 25 years ago.

It not only has personal, nostalgic significance for me, but it also serves more importantly as a daily reminder of who I work for and my place in our system.

You will have wonderful clients and generous ones. You will have demanding and nightmarish ones. Ones you are tempted to change your telephone number to avoid and ones who will pleasantly surprise you in unimaginably varied ways.

There will be those who will lie to you and those who will bare their darkest secrets. They will be individual and corporate, large and small, powerful and weak.

But I repeat: it is in their service that we labor and to whom our legal system demands we give our total loyalty.

They will reward you. Not so much in dollars, although that is important. VERY important.

But they will reward you with the gratifying sense in yourself of having represented someone well -- and hopefully to a successful outcome.

You alone may know the key to unlock the challenge to their problem. You alone may find that key buried deep in precedent or treatise. You alone may possess the rhetorical skill to convince a judge or jury of the rightness of your client's case.

And there will come a time when you will know of that success, and hopefully they will know it. But even if it is never acknowledged, that understanding is in many ways the true reward of our profession.

And in the particular corner of our profession that is intellectual property law, that reward can be extraordinarily sweet.

Why? Because our clients bring us their dreams.

Inventors as a class are sort of an unusual category of human being.

Often misunderstood by family and friends. Cautious and secretive (the inventor of the Furby once told me that inventors come in two types, paranoid and really paranoid. I've occasionally had an inventor even worry about disclosing his invention to me -- and I had to write his patent application.

They are universally passionate about their work, though, and the system that maintains it.

And their passion is a wonderful and an infectious thing, whether small or large.

During my career, I have also represented inventors at the Chevron Corporation, which at the time was the sixth largest corporation in the world. Those inventors, of catalysts and petroleum refining processes, were every bit as enthusiastic about their inventions as the many individual inventors I've worked for over the years.

So, live their passion, share their commitment to this great pillar of the American Dream. You will not only be better lawyers for it, you'll be better people, too.

Because these clients, these inventors, inexorably return us to where I started: the use of our system to advance the cause of science and technology, and, by extension, our collective humanity. And in our service to them, and to the Rule of Law, we, too, add immeasurably to that advancement.

Lastly, it should also fall to any commencement speaker, genetically wired, if you will, to point out a few other truths of our profession and the world at large.

First, a lawyer's role in society does not come without accountability. When called to a higher purpose, as we are, we are also invested with greater responsibilities. Our ethical obligations, to our clients and the system, and our adherence to them, must be above reproach. Too often our colleagues ignore or repress these obligations in the heat of the day. Resist that temptation.

Commit yourself to your community. This institution has been at the forefront of that possibility.

When FPLC was founded 27 years ago, its founders sought to create a setting that would advance IP and public interest law -- two areas that were under-emphasized by the legal community. They wanted to produce graduates that could do more than just pass the bar exam. They sought, admirably, to bridge the gap between study and practice and provide broad legal training that would enable graduates to make a more meaningful, and personal, contribution to their communities.

In its relatively short life-span, FPLC has clearly achieved those goals. It's made its mark on our community.

So, remember, that while you have chosen a noble profession, it is also up to you to choose a noble path.

I would challenge you, too, to follow in the footsteps of those who have harnessed the law as a force of innovation and social dynamism, and reject the law as a tool of oppression and division.

This challenge should be familiar to you, because public service is again one of the principals that guided the establishment of this school. And, it is exemplified in one of the concentrations offered here -- "Community Lawyering" -- as well as the pioneering work of your faculty in areas such as domestic violence, the death penalty, and hate crimes -- issues that capture today's headlines.

And finally, take time for yourself. The practice of law today is at its most frantic, and that is really saying something. The prospect of 2,500 billable hours is a daunting one, and I don't care if they start you out at \$130,000. While I know those student loans loom large, there is no free lunch.

Whether you are building a successful law practice, starting your own business or championing the fight for greater equality, be sure and keep the bigger picture in mind. Strike the right balance between your professional life and your personal one. Don't let your family suffer for your success. And don't forget the words of another of America's great thinkers -- Lily Tomlin -- who reminds us that "even if you win the rat race, you are still a rat."

CONCLUSION

Lastly, with all of this profound advice fresh in your mind, remember always why you came here -- what it was about the law that caught your interest and inspired you.

This weekend, as you finish packing up your things and leave the beauty of this campus and its lasting friendships behind -- ask yourselves two simple questions:

What choices have I made that got me to this point?

What choices will I make, so that decades from now I can look back with a sense of fulfillment -- and peace of mind?

Careers, and lives, don't just happen.

Mindful of these questions, let me close with a quote words from another Dickinson -- the famous one and a daughter of New England, Emily. Her words are simple, but I hope they will stay with you, long after today's celebration.

She wrote: "Dwell in possibility."

Imagine what the law should be, not merely what it is. And do what you can to take it there.

Again, I congratulate you -- your parents, family, and friends -- on what you have achieved, and I rejoice for the world that will be made better by your contributions to it.

Thank you again for the honor of inviting me to participate, and enjoy your graduation.